Case 21425

Claims

1. A process for the biological production of vitamin B_6 which comprises cultivating a host cell transformed or transfected by an isolated DNA or by a vector or plasmid comprising the isolated DNA under the condition conductive to the production of vitamin B_6, and recovering vitamin B_6 from the culture, wherein the isolated DNA comprises a nucleotide sequence that encodes PdxR, which is a flavin adenine dinucleotide-dependent D-erythronate 4-phosphate dehydrogenase, selected from the group consisting of:
(a) a DNA sequence identified by SEQ ID NO:1 or the complementary strand thereof;
(b) a DNA sequence which hybridizes under standard conditions to the DNA sequence complementary to the DNA sequence defined in (a) or a fragment thereof, and encodes a polypeptide having the activity of flavin adenine dinucleotide-dependent D-erythronate 4-phosphate dehydrogenase;
(c) a DNA sequence which codes for a polypeptide having the amino acid sequence encoded by the DNA sequence of (a) or (b);
(d) a DNA sequence which is identical to the extent of at least 80% to a DNA which codes for a polypeptide which comprises the amino acid sequence of SEQ ID NO: 2, and encodes a polypeptide having the activity of flavin adenine dinucleotide-dependent D-erythronate 4-phosphate dehydrogenase; and
(e) a DNA sequence which codes for a polypeptide which comprises an amino acid sequence which is identical to the extent of at least 80% to the amino acid sequence of SEQ ID NO: 2, and encodes a polypeptide having the activity of flavin adenine dinucleotide-dependent D-erythronate 4-phosphate dehydrogenase.

2. A process for the biological production of vitamin B_6 which comprises introducing the isolated DNA as claimed in any one of (a) to (e) in claim 1 into an appropriate host cell, cultivating the obtained host cell under the condition conductive to the production of vitamin B_6, and recovering vitamin B_6 from the culture.

3. The process according to claim 1 or 2, wherein said host cell belongs to the genus *Sinorhizobium*.

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